

## ABSTRACT

An optical fibre having a periodical cladding structure providing an photonic band gap structure with superior qualities. The periodical structure being one wherein high index  
5 areas are defined and wherein these are separated using a number of methods. One such method is the introduction of additional low index elements, another method is providing elongated elements deformed in relation to a circular cross section. Also described is a cladding structure comprising elongated elements of a material having an index of refraction higher than that of the material adjacent thereto. Using this additional material,  
10 prior art structures may obtain much better qualities.

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